Yuting Chen

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Education

Wuhan University, Wuhan, China **Spet. 2022-Present**
College of Life Science
Major: Biological Science **GPA: 3.81/4.00(11/159)** TOEFL: 99 (out of 120)

Research Experiences

Expolring Regulatory Role of Crp Protein in Benzo[a]pyrene(BaP) Degradation by *Pseudomonas*
Lab of Prof. Zhixiong Xie -Wuhan University **Sept 2023-Jun 2024**
● For detecting the function of Crp protein, performed gene knockout of *crp* to obtain a deficient strain, and subsequently, a revertant strain was constructed by homologous recombination method.
● For investigating the phenotypic changes caused by Crp protein, did primary screnning for BaP degration ability as well as swinmming molitility in in the deficient, wild-type and revertant strains.
● For excluding variable effects and isolate Crp protein, performed molecular cloning and optimized expression condition for Crp protein.
● For detecting the interaction between Crp protein, cAMP, and the *rhd* promoter associated with BaP degradation, performed EMSA test.
● For measuring the expression levels of the *rhd* in the deficient, wild-type and revertant strains., performed a qPCR assay.

Design and Constrction of an Adhesion Aystem for an Engineered Intestinal Probiotic
Lab of Prof. Zhixiong Xie -Wuhan University **Nov 2023-Oct 2024**
● For addressing the issue of patients repeatedly taking nutritional peptides, participated in designing an enginnered intestinal probiotic, including peptide secretion, colonization and safety components.
● For ensuring the long-term colonization of the engineered probiotic, involved in the development of an adhesion system and designed the experimental methodology.
● For evaluating the expression levels of the target genes and corresponding proteins, performed molecular cloning for optimize exprssions, followed by WB and an optimized protocol for detecting.
● For determining the phenotypic characteristics of the surface-display protein, perform immuno-fluorescence detection.
● For validating the feasibility of the system, constructed the adhesion system in *Escherichia coli* and verified using WB.

Directed Evolution of EL222 promoter for a DNA Cascade Recording System
Lab of Prof. Zhixiong Xie -Wuhan University **Nov 2022-Nov 2023**
● For realizeing a biosensor for long-term and repeated monitoring, participated in the design of a DNA cascade system capable of recording level information using CRISPR.
● For facilitating rapid testing and control, involved in designing the EL222 blue light-controlled system,

which was later construted in *E.coli*.

● For reducing gene leakage from the EL222 promoter, performed directed evolution of the EL222 binding site using error-prone PCR and explore the efficiency of diffenerent binding sequences.

Honors & Awards

● Gold Award for iGEM 2024, 2023 competition **Oct.2023, 2024**

● Best Foundational Advance Project Nomination and other 3 nominations (Best result for Wuhan University) **Nov. 2023**

● Merit student (for top 10% of students) **Sept. 2024**

● Second class of Study Scholarship (for top 10% of students) **Sept. 2023, 2024**

● Excellent Student (for top 10-23% of students) **Sept. 2023**

Skills

Experimental skills:

● Proficient in conducting molecular biology experiments and certain immunological assays, such as Western blotting (WB), molecular cloning, immunofluorescence,etc.

● Cell culture techniques, such as subculturing, transfection, etc., as well as familiarization with P2 laboratory safety and operational protocols.

● Animal dissection techniques, such as euthanizing mice, organ sampling, etc.

Other skills:

● Python programming language, Photoshop, HTML, CSS, etc.